The Position of Indigenous Knowledge in Canadian Co-management Organizations

Stella Spak *University of Victoria*

Abstract: Northern Canada has seen the emergence of various forms of resource co-management agreements over the last decades. Co-management arrangements either result from land-claim agreements between First Nations/Inuit, or crises (real or perceived) regarding a particular resource. Co-management organizations consisting of Indigenous and government representatives often claim to base their natural resource management decision-making on both biological resource science and the represented Indigenous peoples' knowledge. This paper examines the actual ability of Canadian natural resource co-management boards to learn from the Indigenous Knowledge of represented First Nations communities. It will explore how the epistemological frameworks and employment structures within which co-management boards in Canada operate, shape the boards relationship to Indigenous knowledge. In particular the paper will examine the effect of power on the position of Indigenous Knowledge vis-a-vis biological resource science in the Canadian co-management arena.

Keywords: co-management, Indigenous Knowledge, traditional environmental knowledge, power

Résumé : Le Nord canadien a vu émerger diverses formes d'accords de cogestion de ressources au cours des dernières décennies. Ces accords résultent soit d'ententes de revendication territoriale entre les Premières nations/Inuits et l'État, soit de crises (réelles ou perçues comme telles) autour d'une ressource donnée. Les organisations de cogestion composées de représentants autochtones et gouvernementaux affirment souvent baser leurs décisions en matière de gestion des ressources naturelles à la fois sur la science des ressources biologiques et sur les connaissances des peuples autochtones représentés dans ces organisations. Cet article examine la capacité réelle des conseils de cogestion de ressources naturelles au Canada à tirer parti des connaissances autochtones des collectivités représentées. Il explore comment les cadres épistémologiques et les structures de l'emploi au sein desquels opèrent les conseils de cogestion du Canada façonnent le rapport qu'entretiennent ces conseils avec les connaissances autochtones. En particulier, l'article examine les effets de pouvoir sur la position des connaissances autochtones face à la science des ressources biologiques, dans le domaine de la cogestion au Canada.

Mots-clés : cogestion, Connaissances autochtones, connaissances traditionnelles sur l'environnement, pouvoir

Introduction

What are the realities of "co-management" in regard to First Nations involvement and Indigenous Knowledge? While there certainly is an extensive literature on Indigenous Knowledge and epistemologies and their importance for natural resource management,[1] inadequate attention has been given both to the settings within which the integration of Indigenous Knowledge and biological resource science is supposed to take place, and to the actual results of such knowledge integration.

Using the "crisis-based" Beverly and Qamanirjuaq Caribou Management Board (BQCMB) as its main case study, this paper will explore the influence of power on the position of Indigenous Knowledge in Canadian co-management organizations. It will analyze how the epistemological frameworks within which co-management boards operate are shaped by structures of power, governance and employment and how these structures affect the ability of Indigenous communities to effectively intervene in the resource management process with their knowledge and concerns.

This paper is based on 18 months of fieldwork carried out between 1996 and 1998 in the Dene communities of Tadoule Lake (Northern Manitoba), Fond du Lac (Northern Saskatchewan) and Lutsel K'e (NWT), as well as on attendance at all BQCMB meetings over the same time period. All three Dene communities (respective populations are about 350, 700 and 250) are inaccessible by road for most of the year (save for approximately six weeks of winter ice roads used to ship in heavy supplies), and country foods such as caribou and fish make up a large part of the diet. In addition to participant observation, I conducted structured and unstructured interviews (at times with the help of a translator) with knowledgeable hunters and Elders regarding their experience with the BQCMB, on which all three communities are represented.[2] I approached BQCMB meetings through participant obser-

vation (I generally tried to be a silent observer of the meetings but at times I was pulled out of my silent state) and through communication with government and community board members during coffee and evening breaks. I also attended Gwich'in Renewable Resource Board meetings in Inuvik and Tsiigethchic.

Western/First Nations Understandings of Indigenous Knowledge

Euro-Canadian and First Nations understandings of Indigenous Knowledge, tellingly referred to as Traditional Environmental Knowledge (TEK) in the natural resource management context, are not necessarily congruent. The term "Traditional Environmental Knowledge" became popular in the 1980s when interest in Indigenous ways of knowing (until then only a topic of research in Anthropology, Cultural Ecology, Ethnoscience, etc.) and understanding the environment became more widespread and, in particular, was adopted by international development organizations (see Brokensha et al. 1980). Based on the idea that TEK had been undervalued and could make important contributions to natural resource conservation and management, various TEK working groups were founded in the 1980s (such as the International Conservation Union (IUCN) Traditional Ecological Working Group, etc.). The widespread international recognition of the existence of non-Western environmental knowledge soon led to an increased focus on the existence of such knowledge and its importance for natural resource management within Canada and particularly the Canadian North.

Many Western scientists see Indigenous Knowledge as the knowledge Indigenous peoples have of the plants and animals in their environment, including their overall interaction, and give definitions such as this: "TEK is the system of knowledge gained by experience, observation and analysis of natural events that is transmitted among members of a community" (Huntington 1998:66). Parts of this knowledge are further often paralleled with the scientific discipline of ecology. In spite of the problematic nature of the TEK concept some First Nations scholars are also using the term,[3] but their definition of its meaning generally differs considerably from the common definition used in natural resource management contexts. LaDuke, for example, defines TEK as "the culturally and spiritually based way in which Indigenous people relate to their ecosystems" (LaDuke 1994). This definition thus moves away from the purely physical, functional non-Native view of TEK. Discussing Indigenous ways of knowing, Leroy Little Bear writes that: "In Aboriginal philosophy, existence consists of energy. All things are animate, imbued with spirit and in constant motion. In this realm of energy and spirit, interrelationships between all entities are of paramount importance..." (Little Bear 2000: 77). Little Bear, like LaDuke, therefore draws attention to the importance of the relationship between the physical and spiritual in Indigenous ways of knowing. Explaining their knowledge of animals, and their relationship with important animals such as caribou, Dene Elders often point out that having respect for the animals is of paramount importance to the continued sustainable harvest (Morris Lockhart 1998). From the perspective of many Western resource biologists, however, such fundamental aspects of Indigenous Knowledge are viewed as religious beliefs that should be separated from the physically observable information they have in mind if they are to believe in the validity and importance of TEK in the first place.

As one can see the ideas surrounding Indigenous Knowledge and what it represents are varied. The aspects of Indigenous Knowledge with which I will concern myself in the confines of this paper are the environmental understandings of knowledgeable Dene Elders and community members. In order to avoid the all encompassing generality of the term "Indigenous Knowledge," I will use terms such as knowledge of the Elders, views of the Elders, Dene knowledge etc. as much as possible when referring to the Dene's environmental knowledge.

Power and Its Effect on the Co-management Process

The role of Indigenous, or in our case Dene Knowledge, in co-management organizations presumably depends on whose understanding of the nature of this knowledge is applied. It is thus important to examine whose epistemologies ultimately dominate co-management organizations. Since the position and interpretation of Indigenous Knowledge, (or rather Dene Knowledge or Cree Knowledge or Gwich'in Knowledge) in co-management organizations does in the end likely have more to do with the current power relations within which co-management boards operate than the actual knowledges themselves, an examination of the role of power and its effects on the ability of Indigenous communities participating in co-management processes to intervene in resource management with their knowledge and interest, will thus be necessary.

In his discussion of the integration of TEK and Western science in the Yukon Nadasdy argues that much of this "integration" can more usefully be seen as a process that is "extending the social and conceptual networks of scientific resource management [and with it state power] into local communities rather than as part of an attempt to

meld two distinct epistemological systems" (Nadasdy 1999: 12).

Power is the ability to enforce a certain kind of ideology, a certain way of seeing and understanding the world. Power is the state's ability to enforce a view of the natural world as a resource to be managed according to maximum sustainable yield principles. How we understand the human/environment relationship and, consequently, what a resource is and how it should be managed, can be seen as having less to do with any ultimate truth but as merely reflecting the way power is organized in a particular time period. The state's ability to get resource users to accept state resource management practices as the best, most rational approach to resource management, not because they are forced to do so, but rather because they have been educated to believe in the values and rationale behind state management practices and therefore support it voluntarily, can thus be seen as an ultimate expression of state power.

In order to fully appreciate the underlying forces shaping the following co-management case studies this initial discussion of knowledge and power should be kept in mind. Let us proceed to a brief overview of the differing understandings of what "natural resources" are.

What Is a Resource?

Co-management organizations operating in Dene territory claim to use Indigenous Knowledge, or TEK in order to better manage natural resources. Most Dene and government resource "managers" do however generally have different ways of seeing and understanding a resource. Their understanding of what constitutes optimum resource management is therefore also fundamentally different. The term resource management itself is a European expression exemplifying European attitudes and approaches toward nature. It is an expression stemming from the world-view put forward by Western industrialized societies that largely view a resource as something to be "tapped into" and used, generally in the way of providing raw materials for various industries. In this view a resource is something to be used and controlled by humans. In this approach the proper management of such a resource (at least as far as its renewable plant and animal "components" are concerned) ensures its optimum economic exploitation without depleting or destroying its reproductive capacity (i.e., its sustainable use in order to ensure the continuation of the resources as far as they are deemed necessary for human survival). This anthropocentric attitude is a key component upon which the government resource management rationale is based. The usage of the term "management" in regards to resource activities further conveys the impression that humans actively manage a resource as if they could assign each component of the resource a specific task.

This way of seeing the world and its resources is diametrically opposed to the understandings and paradigms within which many Dene traditionally operate. The most important distinction between European and traditional Dene attitudes towards nature is that the Dene do not see themselves as being separate from or above nature. In this worldview humans are a part of nature. They thus cannot control or manage that of which they are a part, but they can and must regulate their own behaviour in order to ensure the continuation of the balanced reciprocity that exists between them and their surroundings.

When I began talking to Dene hunters about their experience with the Beverly and Qamanirjuaq Caribou Management Board (BQCMB), many immediately stopped me in my tracks to point out that they did not see how one could manage caribou as if one were God. One could only control one's own behaviour in order to ensure that it did not negatively impact on the caribou. An important aspect of this, they pointed out, consists of treating hunted animals with respect (Enzoe 1998, personal communication).

The term "resource management" is thus a European concept based on human dominance over nature that disregards many non-Western views and understandings. Not surprisingly, there is no equivalent term for resource management in Indigenous languages. The closest one can come in translation is "looking after a resource" (Notzke 1994).

As one can see, Dene Elders and hunters and government resource "managers" may have very different understandings of the human environment relationship and, consequently, of what a resource is. How does the co-management process manage to respect and reflect these different understandings?

Co-management in Canada

The Beverly and Qamanirjuaq Caribou Management Board belongs to what is commonly referred to as "crisis-based" co-management. In Canada, co-management agreements are often divided into "land-claims based" and "crisis-based" agreements (RCAP 1996). These classifications refer to the "events" that led to the creation of a particular co-management agreement.

Since 1975, Canada has signed 13 "agreements" with First Nations and Inuit that are referred to as "Land Claim Agreements." Federal and Provincial/Territorial governments hold the position that conservation-oriented, renewable resource regulations established in the provinces and territories prior to the signing of a land-

claim agreement are not extinguished through such agreements (Berkes in Pinkerton 1989: 189). Thus, once a land-claim agreement is initiated, wildlife and resource management within the claim area is subject to a "double administration" which consequently leads to the co-management of the natural resources in the claim area. Crisis-based co-management agreements,[4] as the name implies, generally result out of a real or perceived resource crisis, and/or are set up in order to avert potential biological and/or political crises. Crisis-based co-management boards such as the BQCMB are thus, in essence, tools for conflict resolution. They create a forum at which representatives from Indigenous communities, government and/or industry can come together in an attempt to resolve their differences.

The Beverly and Qamanirjuaq Caribou Management Board

The Beverly and Qamanirjuaq Caribou Management Board was established in 1982 in response to a perceived "caribou crisis." Incomplete biological data on the Beverly and Qamanirjuaq Caribou herd population led to the assumption that both herds were drastically declining in the late 1970s. Biologists, given the task of coming up with a census of the caribou population, could (and can still) only afford to fly over part of the extensive area used by the caribou when they attempted to count the animals. After "sampling" the herd population they proceeded to compile estimates of the total population of the herds. The final result of their survey showed that the population size was dangerously low and most likely decreasing at a precipitous rate (Snowden, Kusagak and Mcleod 1982: 1-15).

The Dene and Inuit who have depended on the caribou for countless generations disagreed vehemently with these census results, stating that the animal population density of part of the herd range is not necessarily a good indicator of the rest of the herd range. In that particular year, they pointed out, the caribou had moved further north than normal as a result of disturbances (e.g., noise of machinery and planes, tagging of caribou) from mining operations and biologists. Therefore, they said, biologists had missed the bulk of the herd population (ibid.).

The data and viewpoint of the biologists were nevertheless used by provincial and territorial (Saskatchewan, Manitoba, NWT) game officials and governments as the sole point of reference for the decision to impose severe hunting quotas on Inuit, Dene and Metis hunters. Predictably, the Inuit, Dene and Metis were angry and frustrated with this turn of events. They concluded that the biologists' decision had been made out of ignorance, disregarding their long-standing connection with the caribou and their profound knowledge of the animals' habits. Furthermore, they were (and many still are) doubtful of the utility of the biologists' knowledge since biologists, they argue, do not spend much time in the caribou range but are city dwellers with a lack of day-to-day contact with the resource. The counter-argument of many biologists was that they did not believe that hunters, who often only had a limited amount of formal education, could have much to contribute to caribou biology (Snowden, Kusagak and Macleod 1982: 1-6).

In order to address the presumed "caribou crisis," representatives of five government agencies[5] re-activated a long-standing Administrative Committee on Caribou Conservation in 1979 as a Caribou Management Group (CMG).[6] Due to the vast nature of the territory and a lack of manpower to actively control hunting, the Committee soon concluded that they could not effectively manage the herds without involving the Indigenous caribou user groups. Thus, they extended an invitation to user communities to have representatives participate in their CMG. In answer to this, and in order to assert their rights to manage their own resources, the Dene and Métis groups in Manitoba, Saskatchewan and the NWT called for a user-only board which would include both treaty and non-treaty Indians, who were the traditional hunters, and would grant government officials advisory status only (Snowdrift Resolution, Apri1 30, 1981, Minutes of the Negotiation of the BQCMB Agreement, December 1981, p. 3). The Dene and Métis were concerned that aboriginal participation as community representatives on a government board would erode existing treaty rights without giving them real management powers. But a user-only board was rejected by the provincial and territorial governments and in June of 1982, after reassurances from the government that participation in an advisory board would not affect existing treaty rights, the Beverly and Qamanirjuaq Caribou Management Board was established (Osherenko 1988: 95; Snowden, Kusagak and Macleod 1982).

The Structure of the BQCMB

Until recently the BQCMB was comprised of 13 members, of whom eight represented Dene, Inuit and Metis communities and five represented the provincial and territorial resource ministries, the Department of Indian Affairs and Northern Development (DIAND) and Environment Canada. DIAND and Environment Canada representation was "phased out" over the last few years while the new Nunavut territory has signed on to the agreement and now also has (apart from the already existing user representation) representation through a regional govern-

ment biologist (Caribou News in Brief, 1999). The Board also has a secretary/treasurer, a retired DIAND employee, who takes the minutes and performs all administrative tasks. Government representatives are appointed by their respective departments while community representatives are appointed by the renewable resource departments administering their respective traditional territory upon the recommendation of the communities (some communities did however seem to be under the impression that the government appoints community representatives).

As can be seen, the majority of BQCMB representatives are Indigenous. This, coupled with the BQCMB's claim to "heavily rely on the traditional knowledge of its user constituents" (BQCMB, 1986: 5), leads one to assume that Indigenous Knowledge and Indigenous concerns must play an extensive role in the BQCMB's operations. It is, however, important to be aware of the actual nature of the agreement establishing the BQCMB. The Beverly and Qamanirjuaq Barren Ground Caribou Management Agreement is really only an agreement between the government of Canada, the government of Manitoba, the government of Saskatchewan and the government of the Northwest Territories (and, since 1999, the Interim Commissioner of Nunavut). While the parties signatory to the agreement recognize that "goodwill and co-operation amongst the above governments and the traditional users of these caribou" (BQCMB Agreement 1982) is necessary, and while the agreement further states that "as well as the value of the caribou to all Canadians generally, a special relationship exists between traditional users and the caribou" (ibid, 1982), the Dene, Metis and Inuit[7] who sit on the BQCMB as representatives are not actually party to the agreement that established the BQCMB. The BQCMB is further solely of an advisory nature and thus can only effect change if it manages to persuade government agencies of the usefulness of its recommendations. This, as I will elaborate below, further weakens the Board's ability to involve Indigenous Knowledge and represent Indigenous concerns in spite of its claim to "heavily rely on the traditional knowledge of its user constituents" (BQCMB 1986: 5).

Over the years a number of publications have dealt with the BQCMB. Some, such as Scotter (1991), are written by former government employees involved in the creation of the Board and are of a rather overly positive and descriptive nature, claiming, for example, that the BQCMB blends traditional knowledge and practices with modern wildlife science (Scotter 1991: 319). Taking such claims and the publications of the BQCMB at face value, some academics have heralded the BQCMB as a model co-management board that integrates traditional knowledge and western science for the benefit of the sustainable management of the resource (Osherenko 1988). While only Cizek (1990) thoroughly questioned the actual ability and commitment of the BQCMB to respect and involve the communities' traditional environmental knowledge, Peter Usher also pointed to some of the BQCMB's weaknesses in his 1991 evaluation of the Board.[8] Asked by the BQCMB to evaluate the first 10 years of the BQCMB's operations and make recommendations for the future, Usher pointed to the difficulties of adequately representing communities through single board members whose only real involvement with government resource management issues was to attend BQCMB meetings twice or three times a year. Usher also noted the BQCMB's strong reliance on scientific and bureaucratic jargon but conceded that efforts had been made to explain technical issues. In this regard he recommended that the Board establish information and orientation procedures in order to educate new community representatives, but in doing so he neglected to thoroughly question the appropriateness of such heavy reliance on bureaucratic and technical jargon. Usher also made reference to the Board's limited use of Indigenous Knowledge of caribou, but without giving clear recommendations on how this could be rectified. Overall Usher rated the BQCMB a success, in part due to its improvement of interagency co-ordination, while pointing out that its real ability had not yet been tested by a crisis. Many of Usher's points and observations made in 1991 are good, but they were not adequately reflected in his recommendations. He assumed overall respect and approval for the Board among community members, whereas my own experience in the communities revealed (see below) a more ambiguous response.[9] He further failed to question the overall implications of a co-management process in which communities and community representatives are seen to be in need of education on how best to participate in the government's management process.

Attracted by the BQCMB's publications and papers, such as Osherenko's and Scotter's, which claimed that traditional knowledge and Western biology were now integrated by the BQCMB, my own research initially set out with the hope of understanding how the BQCMB brought both Indigenous and Western knowledge to bear on its operations. When I attended my first BQCMB meeting I was struck by the fact that little seemed to distinguish this meeting from any other Euro-Canadian bureaucratic meeting. Meetings were generally held in rented hotel board rooms, or in school classrooms when meetings were held in the Indigenous communities. After the opening prayer (the only visible cultural concession to

the participation of Indigenous community members in BQCMB meetings), the minutes of the previous meeting would be approved as well as the meeting's agenda. Most agenda items concerned issues the respective government agencies were grappling with at the time (e.g., protected areas strategies, review of management plans, fit of administrative activities with those of other government agencies) and since BQCMB meetings only last two to three days, the Board generally does not spend much time on individual items. Due to the essentially bureaucratic nature of much of the discussion on the agenda items, government representatives generally held the floor for about 80% of the time.[10] This cannot be attributed to the disinterest of the community representatives in the overall issues affecting caribou (their strong interest in the continued health and survival of caribou is indisputable). Rather, this lack of active participation by community representatives in the discussion is a direct result of having to participate in a process in which their interests are overwhelmed by the language and expertise of other interest groups (Crowfoot and Wondolleck 1990: 1; Morrow and Hensel 1992). They are not involved in (nor informed about) the various government departments' politics and policies, nor are they (for the most part) familiar with the heavily jargonized "bureaucratese" and "biologese"[11] most government representatives employ in their discussions. The lack of intelligibility or relevance of much of the discussions taking place at BQCMB meetings for the community representatives generally manifested itself in increasingly lower attendance rates as the meetings wore on. Even when agenda items did raise comments from Indigenous community members, as was, for example, the case during the discussion of the provinces' "protected areas strategies," the discussion would be steered towards the aspects identified as relevant by the Board's government representatives. The focus tended to be on operational "how to" questions, clearly steering away from possible larger philosophical issues that specific items might raise. Accordingly, the expressed uneasiness of various Indigenous community representatives with the very *idea* of protecting specific areas while allowing the exploitation of the land right next to such areas was essentially ignored in favour of action-oriented suggestions.

One came away with the impression that the BQCMB meeting constituted a good opportunity for the different provincial, federal and territorial renewable resource employees to consult with each other and exchange information. It is admittedly a good idea for provincial, territorial and federal renewable resource organizations to exchange information, especially with respect to migratory species, but I was unable to learn how the BQCMB, with the help of such bureaucratic meetings, managed to "heavily rely on the traditional knowledge of its user constituents." Subsequent discussions with the Indigenous BQCMB representatives and formal and informal interviews with Elders and active hunters in represented communities revealed that they were not under the impression that the BQCMB was interested in their Indigenous knowledge.

The BQCMB and Indigenous Knowledge

While a surprising number of Elders and active hunters were only vaguely aware of the existence of the BQCMB, others who had attended one or two of the BQCMB's community meetings felt that "They [the BQCMB] are not interested in what the Elders have to say. They just go by what is there you know. What's in the books." Most Elders who have had the chance to attend and speak at BQCMB meetings feel a need to speak about their dislike of the practice of satellite collaring caribou. As already mentioned, treating animals with respect is of utmost importance in Dene views on sustainable human/animal relationships. An important aspect of this is to accept the gift of sustenance if an animal has offered itself to the hunter. To many Elders, the practice of satellite collaring is a sign of ultimate disrespect towards the animals. According to traditional Dene understandings, animals consciously participate in hunting and a hunter can only kill animals that have allowed themselves to be hunted. The placing of a satellite collar around an animal, instead of accepting its offer, is denying the animal's right of choice and hence exhibits not only extreme disrespect towards the animal, but also endangers the continuation of everybody's survival as the animals may refrain from offering themselves in the future.[12]

In the eyes of the Elders, the satellite collaring of caribou thus represents a real threat to the future availability of caribou. At every community meeting I attended, Elders stated their discomfort with this practice, attempting to convey the need to be respectful of caribou to government renewable resource biologists. Such comments were either politely ignored by government board members, or attempts were made to explain the usefulness of the information derived from satellite collaring (e.g., hoping to track migration routes) and the lack of harm to the animals given the diminutive size and weight of the collars. The unwillingness or inability of government renewable resource biologists to understand that the issue is much more complex and that it relates to wider philosophical questions of proper human/animal relationships, leads Elders to believe that the BQCMB is not interested in

what they have to say, thus the comment that the biologists only go by what is in the books (i.e., they are only interested in Euro-Canadian approaches).

One Elder in Lutsel K'e further elaborated on the difficulties of meeting and working with Euro-Canadians on resource management issues by pointing out that:

> The people, the White people, whatever they write down on a piece of paper, they just follow their rules and they don't care what the people that live off the land have to say, and so that is why it gets really complicated when they have meetings like this you know. They have to have the rules of the White people and the rules of the Dene people, it has to be communicated and a decision has to be made right there instead of, you know, only White people making decisions compared to the Dene people.[13] (Lutsel K'e 1998)

The Elder's observation speaks of the fact that, while co-management boards such as the BQCMB meet in First Nations communities ostensibly in order to involve the "resource users" in the management of the resources, community members are mostly invited to comment on plans that have already been developed in order to achieve goals set by state-mandated experts (Feit 1998: 130). Thus, in order to be included, community input has to support the plan of action set by state resource management agencies.

In Canadian natural resource management contexts, in particular in the North, reference to the importance of TEK abounds. However, much is made of the difficulty of integrating or utilizing TEK in state-sponsored resource management practices. Generally, state resource managers who are willing to take TEK seriously focus their efforts on attempting to research and package TEK in a manner in which it can fit into, strengthen, and support the goals, problems and objectives that state management agencies have identified as important. Thus Elders and hunters might, for example, be asked about their knowledge of caribou migration patterns in order to fill gaps in the seasonal distribution data of renewable resource agencies. Nadasdy (1999) speaks directly to this issue, observing that scientists and resource managers (who are heavily invested in scientific management as a profession) tend to view TEK as a supplementary body of information that does not threaten the fundamental assumptions of wildlife management. The implicit assumption is thus that the value of TEK lies in its use by wildlife managers rather than seeing it as knowledge that might be used to re-think the unexamined cultural assumptions of how humans ought to relate to the world around them, which unconsciously forms the basis of scientific wildlife management itself (Nadasdy 1999: 5). Thus, rather than seeking out Indigenous Knowledge in order to learn from other perspectives, TEK is often reduced to information or data that can be inserted into state resource management practices, leaving the overall approach of scientific resource management unchanged (Cruikshank 1998: 53; Nadasdy 1999: 5).

Attendance of BQCMB meetings made it clear that if TEK was to be considered at all by the Board, it was seen in exactly this manner. After 15 years of existence, the BQCMB was, at its 44th Meeting in Thompson, Manitoba in 1997, wrestling with the idea of getting a TEK study off the ground in order to seek out information community members had of important Caribou habitats. This TEK was then to be included in a government report titled "Protecting Beverly and Qamanirjuag Caribou and the Caribou Range" (the report was commissioned due to increased pressures from the mining industry). A consultant had been hired to help design the study, but most government board members did not like the wider philosophical issues raised by the consultant. The consultant pointed out that TEK studies must be community-based. The TEK study should thus, so the consultant, be driven by the Dene resource users with the assistance of the government managers, not vice versa. Good TEK studies, he continued, acknowledge and accommodate the principles of reciprocity, that is, they ensure that issues of interest and concern to the Dene resource users are not pushed aside in favour of a research agenda solely set by wildlife managers or biologists. Interview questions, he explained, need a context and rationale resource users can understand, and community members participating in the study need to know what their knowledge will be used for. The consultant also explained the necessity of honouring the individuals' and communities' intellectual property right to their TEK. The consultant further pointed to the dangers of decontextualizing TEK through recording, since TEK, he explained, is a "high context communication system." Taken out of context and used through the "eyes" of Western scientific knowledge, he elaborated, TEK does not only run the risk of being misinterpreted, but it becomes possible to use TEK while excluding the actual holders and interpreters of this knowledge from participating in the decision-making process in any meaningful way (Stevenson 1997: 6, 13).

When the BQCMB received and reviewed the consultants proposal at their 44th board meeting the government board member repeatedly pointed out that they just wanted a quick study that would allow the biologists to fill the gaps they had in their database, or, as one government representative pointed out, "we just want to collect information for our purpose" (44th BQCMB meeting,

Nov. 1997). Being essentially uncomfortable with the consultant's recommendations, most of the Board's government members were quick to cite a lack of funds for such a study. The ensuing discussion made it very clear that the BQCMB was not interested in considering the overall ethical implications of working with Dene Knowledge, but simply wanted to "use TEK data in order to fill its information gaps" (Wakelyn 1996:7). The government representatives seemed to be worried that a, as they called it, "large scale" study would provide them with all kinds of TEK they did not need or want rather than the specific data they had in mind. Continuing on with their arguments against the consultant's proposal they pointed out that government renewable resource officers and aboriginal caribou users should not be seen as occupying two sides in the issue of caribou management since they would all benefit from the caribou's proper management. Thus, as they saw it, their wish to address the specific "gaps" biologists had in their information on caribou with a simple and quick study was justified. They saw no need to consider all of the consultant's recommendations.

While it is of course true that successful caribou protection will benefit the Dene communities who depend on caribou, the underlying assumption behind the government board members' arguments is that only the government's overall approach will ensure the resource's long-term survival. Any approach or knowledge not easily fitted into the government's operations is simply deemed superfluous.

As the topic of TEK was raised during the 44th BQCMB meeting, one of the Board's community representatives further observed that, if the BQCMB was interested in TEK, it should have acted on that interest when the Board was first established. Thus, while a BQCMB report from 1986 already claimed that the Board attempts to "heavily rely on the traditional knowledge of its user constituents," even the Board's long time community representatives had, until 1997, not been given the impression that such an interest actually existed, thereby corroborating the Elder's observation that the BQCMB simply was not interested in their knowledge.

When I discussed the BQCMB's relationship to the communities and their knowledge with community members one hunter explained that in his opinion the BQCMB was: "Trying to pass their way [of doing things] into our life that's how people look at it."[14] The fear is therefore that the "rules of the Dene" are not only ignored but that participation in co-management may be an attempt to get the Dene to buy into the "rules of the White people." Co-management is often romanticized as a Canadian way of dealing with difficult and potentially conflict-laden situations in a peaceful, inclusive and democratic manner. The heavy emphasis co-management boards such as the BQCMB have on educating resource users about wildlife management (the BQCMB invested much of its meagre funding into a "Caribou Schools Program" in which children and community members learn about important scientific caribou management issues) can, however, indeed be perceived as an attempt to get First Nations to buy into the Western approach to resource management, thus laying the groundwork for future co-operation. Sadly, such attempts at education can be well meant and sincere, but they reflect the ignorance that can be encountered among some wildlife biologists. This ignorance was clearly evident during the 1998 BQCMB meeting in Tadoule Lake. On the last day of the meeting, the community's school invited all Board members to speak to the assembled students. Giving what he seemed to hope would be an inspirational speech, a board member and well known caribou biologist informed the assembled Dene children that if they stayed in school and then went on to higher education, maybe one day they too would know as much about caribou as he did. His well meant speech revealed a stunning lack of understanding, completely ignoring the fact that if it were not for their ancestors' knowledge of caribou the assembled children would never have been born. He further made it very clear that real knowledge about caribou was something to be learned in the institutional scientific setting, not on the land, thus emphasizing the importance of "book learning."

The BQCMB is, unfortunately, not set up to equitably share decision-making in regard to the best possible ways of managing the human/caribou relationship. Rather, it attempts to convince user communities of the importance of the state's approach to resource management. Co-management boards such as the BQCMB involve Indigenous resource users because this is seen as the only way to ensure greater compliance with state resource management policies, and/or because co-management is seen as the only alternative to confrontation when Indigenous resource users become critical of state management policies, rules and regulations, and threaten to assert their rights in political and legal arenas. Most crisis-based co-management agreements are only of an advisory nature and, like the BQCMB itself, simply invite resource users to observe and possibly participate in state resource management procedures. TEK, if it is considered at all, is merely seen as data that may fill information gaps state resource managers have in particular areas (Wakelyn 1996: 7), not knowledge with the potential to refocus the overall approach of state resource management.

Since the BQCMB is only advisory in nature and lacks any real decision-making powers, it is not very surprising that its relationship to Indigenous Knowledge is dominated by an unquestioned adherence to state resource management practices. But to what degree is the BQCMB's inability to be serious about Indigenous Knowledge a direct result of its structure and status and to what degree is it representative of the relationship that all co-management organizations in Canada have to Indigenous Knowledge? An examination of the policy-making, land-claims based Gwich'in Renewable Resource Board (GRRB) will help in delineating the extent to which a view of Indigenous Knowledge as merely data to be inserted into state resource management is endemic to co-management organizations in Canada, or simply a result of the status (advisory versus policy making) of a particular board.

The Gwich'in Renewable Resource Board

As this brief examination of the land-claims based Gwich'in Renewable Resource Board will show, co-management board practices need not be as bureaucratic or distant from communities as those of the BQCMB. Although the structure and scale of these two boards are quite different, this brief example does show that co-management boards can be shaped to better suit knowledge exchanges.

The Gwich'in Renewable Resource Board (GRRB) is the main instrument of renewable resource management in the Gwich'in Settlement Area (GSA).[15] While the Gwich'in Renewable Resource Board does not just concern itself with one species, it (unlike the BQCMB which covers a vast region and involves two provincial and two territorial governments) has the advantage of looking after the renewable resources of just one particular region.

The GRRB has been in operation since 1994 and has professed to have spent $958 000 on Gwich'in Environmental Knowledge Projects during its first four years of operation alone (Charlie and Clarkson 1998: 8). The GRRB consists of six regular members, of whom three are appointed by the Gwich'in Tribal Council, two by the Government of Canada (Department of Fisheries and Oceans, Canadian Wildlife Service) and one by the Government of the NWT (Department of Resources Wildlife and Economic Development). Each board member has an alternate in case of inability to attend, and all Board members recommend and appoint a Chairperson from the GSA. Counting both the regular and alternate members as well as the Chair, seven of the GRRB's members are Gwich'in, while six represent government departments. The GRRB, further, has a staff support team of 10 to 12 employees.[16] The Board and its support staff are linked to the four Gwich'in communities in the GSA through so-called Renewable Resource Councils (RRCs) that exist in each community and are comprised of up to seven concerned and interested community members. It is within the GRRB's mandate to frequently consult with the RRCs. Thus, unlike the BQCMB, the GRRB does not expect single community representatives to be able to represent entire communities. Rather, the important link to the communities is established through a group of community members.

The GRRB has the power to establish policies and propose regulations. Its decisions are, however, subject to ministerial override (Articles 12.8.23-30 of the Gwich'in Comprehensive Land Claim Agreement).

Attendance at a GRRB meeting in the Gwich'in community of Tsiigehtchic revealed that, while the meeting had the usual trappings of bureaucracy,[17] there were some fundamental differences between GRRB meetings and BQCMB meetings. For example, the language used at the GRRB meeting was kept relatively free of the specialized jargon encountered at the BQCMB, and a much higher percentage of the agenda items covered issues and projects undertaken jointly by the GRRB and the RRCs, as a result of which the overall discussions had much higher Indigenous participation. During a discussion of the progress of a specific fish monitoring study, a direct exchange ensued between the GRRB's staff fish biologist and an Elder concerning the specific locations and methods used in the study. Both made use of Gwich'in place names in order to be more specific. After having hoped in vain to observe such direct exchanges at BQCMB meetings it was refreshing to finally witness such discussions.

The overall attitudes and actions of the GRRB's fisheries and wildlife biologists differed from those I had encountered at the BQCMB. During breaks and at the evening meals of the GRRB meeting I attended in the Gwich'in community of Tsiigethchic, GRRB biologists could frequently be observed in unofficial conversations with various community members and the seating preference during meals did not break down into Euro-Canadian and Indigenous camps (as had generally been the case at BQCMB meetings). As the GRRB's biologists explained to me during private discussions, being open to and learning from the Elders' "Gwich'in knowledge of the land" (preferably on site) while also sharing their own knowledge with them, was simply common sense. During our conversations it became apparent that especially those biologists who had spent extensive periods of time on the land with Gwich'in had a healthy respect for "Gwich'in knowledge of the land.

With one notable exception, the BQCMB's biologists have not had much exposure of this kind, and thus by and large seemed to view Indigenous Knowledge as either something people may have possessed in the past or as a nebulous sort of knowledge with strong religious, cultural and political undertones. They considered it to be something less real than their scientific knowledge, something they have to consider because of political rather than scientific reasons.

The GRRB's strong commitment to "Gwich'in knowledge of the land" is of course not simply due to the attitudes of its biologists. It results from the GRRB's position as a renewable resource board within the Gwich'in Settlement Area. When referring to wildlife harvesting and management in the Gwich'in Settlement Area, the Gwich'in Comprehensive Land Claim Agreement states that its objectives are "to respect the harvesting and wildlife management customs and practices of the Gwich'in and provide for their ongoing needs for wildlife," as well as "to involve the Gwich'in in a direct and meaningful manner in the planning and management of wildlife and wildlife habitat" (GCLCA 12.1.1). At a renewable resource workshop in February of 1994, the year the GRRB was established, the Gwich'in further stated that their traditional knowledge about the land and wildlife should be recorded and used in resource management (Charlie and Clarkson 1998: 2). Thus the GRRB has clear directives and essentially no choice but to seek out and use "Gwich'in knowledge of the land" in its operations.

When one compares the employment structures within which the BQCMB's and GRRB's biologists work, one can find further explanations for their differing relationship to the represented Indigenous communities and the communities' knowledge. The BQCMB's biologists are employees of the respective government agencies represented at the BQCMB. They are thus under the direct influence of their respective renewable resource agencies whose concerns and interests they are required to represent. Representation of the concerns and interests of the Indigenous communities is not a very important aspect of their overall positions and thus tends to get ignored unless it is in line with the interests of their employers. The fisheries and wildlife biologists advising the GRRB on renewable resource management are, on the other hand, not employed by external government agencies, but work exclusively for the GRRB. An ability to work with, learn from and be responsive to Gwich'in knowledge of the land is thus a necessary component of their successful employment.

Despite its active Gwich'in participation and numerous "Gwich'in knowledge projects," the GRRB does, however, exhibit a strong tendency toward reliance on "Euro-Canadian scientific/bureaucratic" resource management practices in its overall approach. Animals continue to be outfitted with satellite transmitters, and Gwich'in knowledge of fish, moose, caribou and so on, is in the end predominantly used to support and help the GRRB's biologists, who are trained in the state's approach to resource management, with their work. Ultimately, the GRRB and its staff biologists function within and under the wider Canadian renewable resource management structures. The GRRB's biologists therefore have to work with and be responsive to Gwich'in knowledge and concerns while at the same time reflecting the overall administrative policies of the territorial bureaucracy to whom the GRRB is in the end accountable. The GRRB thus takes Gwich'in knowledge of the land seriously and spends quite a large proportion of its funding on such projects. The use of Gwich'in knowledge of the land does not, nevertheless, generally lead to any challenges or re-examinations of the overall assumptions and theories of state resource management practices (such as the view of resources as something to be managed according to maximum sustainable yield principles and the heavy reliance on numerical data). Rather, Gwich'in knowledge of the land is used to support state resource management practices by providing information on, for instance, animal and habitat health and possible population densities. The GRRB's moose survey, habitat and harvest study of 1998 is a good example of this. The study set out to determine moose density, distribution and population changes using the communities' TEK and biology (Marshal 1998:7). While much of the study was carried out by Gwich'in hunters who relied on their extensive traditional environmental knowledge of the area, the overall rationale and framework within which the study took place remained grounded in classic state resource management practices.

To summarize, then, the land claims based Gwich'in Renewable Resource Board is structured in a manner that allows it to work with Indigenous Knowledge and use Gwich'in knowledge of the land in its operations. The GRRB's use of Gwich'in knowledge does, however, in the end still reflect the view of Indigenous Knowledge as information to be used in order to fill the information gaps of resource biologists, rather than knowledge that might lead to a wider discussion on and re-examinations of state resource management practices.

While the BQCMB's inability to be serious about Indigenous Knowledge is, in part, a direct result of its structure and status, its overall view of Indigenous Knowledge as "data that may fill the information gaps of resource biologists" does, unfortunately, appear to be rep-

resentative of the relationship Canadian co-management organizations have to Indigenous Knowledge.

Conclusion

All knowledges, including scientific knowledge, are embedded in the larger socio-cultural processes which give them meaning (Latour 1987; Longino 1990; Nader 1996; Woolgar 1988; Young 1972). The production of scientific knowledge is therefore a social process that simultaneously produces the artefacts of science and their utility (Latour 1987). Taken out of the socio-cultural framework within which it has meaning, knowledge may either appear pointless and illogical, or it becomes reduced to mere data that can be easily understood and fitted into other ways of knowing.

The overall rationale within which co-management boards in Canada operate remains based on Euro-Canadian scientific/bureaucratic knowledge and values (e.g., maximum sustainable yield). Even co-management boards which make a serious effort to include Indigenous Knowledge in their operations (such as the GRRB), do so without stepping outside of the state's Euro-Canadian scientific/bureaucratic framework of resource management. Scientifically trained resource biologists do in the end decide which aspects of Indigenous Knowledge are to be included into the management process and which are to be ignored. Not surprisingly, Indigenous Knowledge not congruent with scientific resource management practices (such as the importance of maintaining respectful relationships with animals and the problematic of satellite collaring) tends to be ignored in favour of TEK data that can be easily inserted into existing biological information gaps. Indigenous knowledge used in the co-management process is thus taken out of the socio-cultural context within which it was created and is "as distilled TEK artefacts" (Nadasdy 1999) or data, integrated into another culture's resource management practices.

Nadasdy's observation that the integration of TEK and science through co-management organizations may more usefully be seen as a process that is "extending the social and conceptual networks of scientific resource management [and with it state power] into local communities rather than as part of an attempt to meld two distinct epistemological systems" (Nadasdy 1999: 12) is therefore unfortunately very accurate. In the end, as Nadasdy points out, this process in which the life experiences of Elders, through distillation and compartmentalization, are rendered into forms that can be used and interpreted far from these communities, only serves to concentrate power in the hands of distant "centres of calculation" at the expense of local people. TEK research and co-management can thus be seen as a way of extending the networks of scientific resource management into local communities. Communities who participate in co-management organizations will be trained not only to accept the ultimate authority of science-based resource management, but are also led to see the utility of their own knowledge as mere supporting data for science rather than alternative systems of "resource management."

The use of data stemming from Indigenous Knowledge undoubtedly often leads to improved state resource management. Indigenous participation in state-sponsored natural resource co-management organizations does, however, clearly display the power of the state to "promote certain forms of behaviour, activity and feeling" among Indigenous participants in the co-management process. State-sponsored co-management regimes, whether they are the result of a real or perceived resource crises or part of the administrative structure of land claims, will inevitably exercise the state's power to "educate" the younger generation of Indigenous "resource users" to see the human/animal, human/environment interface in the same way as state resource managers.

Instead of using resource co-management as a tool to assimilate isolated land- based Indigenous communities and thereby aiding in the concentration of power in distant administrative centres, the autonomy of these communities over their resources should be respected. Rather then dictating resource management practices, state resource biologists should serve such communities as experts who are available to help while respecting their autonomy and their right and ability to shape the metamorphosis of their traditions.

Only in settings in which Indigenous Knowledge and biological resource science are brought together in sincere attempts of learning, outside of the structural restraints and power imbalances created by the process of integrating (or subordinating) Indigenous knowledge into biological resource science-based management, can real two-directional learning be facilitated.

Stella Spak, PhD, University of Victoria, Indigenous Governance Program, Faculty of Human and Social Development, PO Box 1700, Victoria, British Columbia, V8W 2Y2, Canada. E-mail: stspak@shaw.ca

Notes

1 See Berkes 1988, 1994, 1999; Feit 1988; Freeman 1992; Johnson 1992; Stevenson 1996; McGregor 2000; Nakashima 1990; Inglis 1993; Battiste 2000; Little Bear 2000; Cajete 2000; Henderson 2000; Freeman and Carbyn 1988; Freeman 1989, 1992; Feit 1988; Doubleday 1993; Lewis 1993; Johnson 1992; Brook 1993; Clarkson 1992; Stevenson 1996; and Charlie and Clarkson 1998.

2 I would like to acknowledge and thank the people of Tadoule Lake, Lac Brochet, Fond du Lac and Lutsel K'e for their hospitality and friendship without which none of this research would have been possible. In particular I would like to thank the following Elders for their time, interest and wisdom: Eliza Enzoe, Samuel Enzoe, Morris Lockhart, Madeleine Drybone, the late Zepp Cassowy, Pierre Catholigue, Alisette Abel, Joe Martin, the late Pierre Fern, Abraham Samuel, Neomi Denechezeh, Fred Duck, Jimmy Clipping, Charlie Kithithee, Alex Kithithee and Alex Sandberry.

3 The non-Native definition of Indigenous Knowledge is inscribed in the three words "Traditional" "Environmental" or "Ecological" and "Knowledge." The term "traditional" freezes practices in time giving the impression that TEK is knowledge of the past. The terms "environmental" or "ecological" speak of the scientific thinking in the West which sees human beings as separate from the non-human parts of the world, a view that is essentially non/sensical from a First Nations perspective. The term "knowledge" leads to the core of the problematic of the TEK concept. Many anthropologists have long argued that knowledge is culturally constructed (e.g., Evans-Pritchard 1937). What is defined as valid TEK by resource biologists and what is excluded from that definition is thus generally based on their cultural assumptions of what constitutes real knowledge and what does not. The type of knowledge readily accepted cross-culturally (e.g., animal health, migration patterns) would be more aptly described as information rather than knowledge (see Hensel and Morrow 1992 and Nadasdy 1999 et al. for a detailed discussion of the Western domination of the TEK discourse through the use of unexamined or contested terminology).

4 While this paper focusses solely on agreements between governments and First Nations, agreements between First Nations and particular industries operating in their territory are also frequently referred to as crisis based co-management agreements.

5 DIAND, Environment Canada and the renewable resource organizations of the NWT, Manitoba and Saskatchewan.

6 This Administrative Committee on Caribou Conservation had been established during the presumed "caribou crisis" of the 1950s and had, albeit not very actively, functioned as a policy advisory body on northern caribou.

7 Since 1999, the Inuit are essentially party to the agreement through Nunavut.

8 Usher1991, The Beverly-Kaminuriak Caribou Management Board: An Evaluation of the First Ten Years and Recommendations for the Future.

9 Perhaps the longer involvement with the BQCMB has, over time, led to greater knowledge of its shortcomings and hence dissatisfaction with it among community members.

10 This was the same at all of the four BQCMB meetings I attended over the 1996-98 period.

11 Bureaucratic abbreviations such as RWED (Resources Wildlife and Economic Development), GIS (Geographic Information Systems) etc., as well as biological terminology such as habitat, sustainable management, recruitment etc. were used indiscriminately and without explanation. I was asked about the meaning of some of these terms by community representatives in private, thus revealing that they generally did not feel comfortable to interrupt the discussion in order to enquire about terminology.

12 The importance of not playing with animals in this way is explained in the traditional Dene story "When the Caribou Had no Fear," narrated by John Clipping and translated by Mary Code of Tadoule Lake.

13 Not all interviewees wanted to be identified by name due to the potential political nature of their comments.

14 Not all interviewees wanted to be identified by name due to the potential political nature of their comments.

15 The Gwich'in Renewable Resource Board (GRRB) was established as part of the Gwich'in Comprehensive Land Claim Agreement signed in April of 1992 in Fort McPherson, NWT. Originally, the Gwich'in were part of the Denendeh Claim, but they were frustrated with its slow progress, which was in part due to a debate over whether the proposed Agreement in Principle (AIP) would compromise aboriginal rights and title. The Gwich'in felt that these discussions were too philosophical and, hoping to achieve immediate improvements to the lives of their people, decided to break away and settle a Gwich'in Regional Claim (Abel 1993: 257).

16 His staff support team includes a secretary, Gwich'in environmental knowledge co-ordinator, as well as forestry, fisheries and wildlife biologists.

17 For example, a structured and itemized agenda, the passing of motions in order to approve or amend, the following of "Robert's Rules of Order," and so on.

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